widlinovations

widlaser C700

USER MANUAL

widlinovations
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widlaser
widcnc
widlaminator

Widinovations, lda, cannot be held responsible for any direct or indirect damages, which result from using or working with the products electric circuits or software described herein. The apparatus must be used only by trained and skilled personnel. Before use the manual should be read and followed carefully.
Furthermore widinovations, lda, reserves the right to change or alter any product described here in without prior notice.

In case of failure, please check the device first. If unsuccessful, please note all data of the device (year of manufacture, software version, etc.) and call us from a telephone next to the buttoned-on device.
For queries or technical problems please contact your dealer or widinovations, lda, directly at the above address.

widlaser

Content

1. Overview

1.1. Introduction of the machine

The widlaser C700 is a high-quality CO2 laser machine. The CO2 laser tube means that the system has long life-cycle. The machine with a CleanProtect® design guaranties minimal maintenance costs with the maximum performance. The combination of a high-quality CO2 laser tube, with the high-quality and high-speed mechanical and electronic components, guaranties highest speeds with the highest quality. Together with the user-friendly software and interface, provides a flexible and productive laser cutting and engraving solution of the highest quality standards.

1.2. Introduction of the manufacturer

Widinovations, lda, is the manufacturer of the widlaser C700. We thank you for choosing our laser system We believe you will be very pleased with our machine. The following information will guide you, through the fast and safe way to use your new laser machine.

Here are some things to keep in mind before starting to use the machine.

1.3. Packaging inspection

Unless otherwise agreed, the machine is delivered in a wooden case.

CAUTION
During transport the transport case can slip, tip or fall over.
Always secure the transport case and take into account the center of gravity of the box.

Upon arrival, inspect the delivery to ensure that it is complete and has not suffered any damage. If any transport damage is visible, do not accept the delivery or only accept it with reservation. Record the scope of the damage on the transport documents/delivery note. Initiate the complain process. For all defects that are not discovered upon delivery, be sure to report them as soon as they are recognized as damage claims must be filed within a certain period, as granted by law.

2. Safety principles and instructions

At the time of the machines development and production, it was built in accordance with prevailing technological regulations and therefore conforms to industry safety standards.

However, hazards may arise should the machine be operated by untrained personnel, used improperly or employed for purposes other than those it was designed for.

This chapter provides an overview of all-important safety considerations necessary to optimize safety and ensure the safe and trouble-free operation of the machine.

Other chapters of this manual also contain specific safety instructions.

Signs, labels and pictograms affixed to the machine must be kept visible and must not be removed.

Important safety instructions in this manual are marked with symbols. These instructions for work safety must be followed. In all these particular cases, special attention must be paid in order to avoid accidents, injury to persons or material damage.

WARNING!
Risk of injury or death
This symbol marks instructions that must be followed in order to avoid harm to one's health, injuries, permanent impairment or death.

ATTENTION!
Risk of material damage
This symbol marks instructions which, if not observed, may lead to material damage, functional failures and/or machine breakdown.

WARNING!
Danger – electric current
This symbol warns of potentially dangerous situations related to electric current. Not observing the safety instructions increases the risk of serious injury or death. Care is to be taken in particular during maintenance and repair work.

WARNING!
Danger – laser beam
This symbol warns of potentially dangerous situations related to the laser beam. Not observing the safety instructions increases the risk of serious injury.

NOTE
This symbol marks tips and information which should be observed to ensure efficient and failure-free operation of the machine.

2.1. Laser safety classification

The laser safety class indicates the risk potential based on the level of accessible laser radiation.
The widlaser C700 is a Class 2 (US: class II) laser system.
Integrated laser source of the widlaser C700 is a Class 4 (US: class IV) laser system.

Class 2 (US: class II)

The accessible laser radiation of Class 2 (US: class II) laser systems does not pose any hazard for the skin. Any short-term radiation of the eyes also poses no risk due to the low-level output. In the event of longer, more intensive radiation, the eye is protected by the natural lid reflex.
The widlaser C700 uses a Class 2 (US: class II) pilot laser. In order to prevent irritation of the eyes during operation, the operator should not look directly at the laser source.
Diffuse reflections of the pilot laser are entirely harmless.

Class 4 (US: class IV)

High powered lasers (visible or invisible) considered to present potential acute hazard to the eye and skin for both direct (intrabeam) and scatter (diffused) conditions. Also have potential hazard considerations for fire (ignition) and byproduct emissions from target or process materials.
It is the responsibility of the operator of the machine to take appropriate measurements to eliminate any dangers such as fire or explosions through the laser beam.

When dealing with class 4 (US: class IV) laser follow the following precautions:

- A trained laser safety officer has to be appointed to evaluate potential hazards and to ensure that appropriate control measures are implemented.
- The laser-controlled area shall be posted with appropriate warning signs or warning lamps.
- The laser-controlled area shall be defined to contain the laser radiation.
- Also, it must be protected against unauthorized access.
- The operator of class 4 laser systems always has to wear appropriate safety glasses.
- An indicator (typically a light) to provide a warning of laser emission in advance of and during the emission time;

2.2. Energy safety classification

The widlaser C700, requires a stable electrical connection according the following specifications, 230v 16A 50/60Hz.
The machine´s electrical connection must be grounded.
It is strictly forbidden to connect or operate the machine during thunderstorms and any type of electrical instability moments or events.

In the electrical appliance manufacturing industry, the following IEC protection classes are defined in IEC 61140 and used to differentiate between the protective-earth connection requirements of devices.

According to this classification, the widlaser C700 is a Class I product.

These appliances must have their chassis connected to electrical earth (US: ground) by a separate earth conductor (colored green/yellow in most countries, green in the US, Canada and Japan). The earth connection is achieved with a 3-conductor mains cable, typically ending with 3-prong AC connector which plugs into a corresponding AC outlet. The basic requirement is that no single failure can result in dangerous voltage becoming exposed so that it might cause an electric shock and that if a fault occurs the supply will be removed automatically (this is sometimes referred to as ADS = Automatic Disconnection of Supply).

A fault in the appliance which causes a live conductor to contact the casing will cause a current to flow in the earth conductor. If large enough, this current will trip an over-current device (fuse or circuit breaker (CB)) and disconnect the supply. The disconnection time has to be fast enough not to allow fibrillation to start if a person is in contact with the casing at the time. This time and the current rating in turn sets a maximum earth resistance permissible. To provide supplementary protection against high-impedance faults it is common to recommend a residual-current device (RCD) also known as a residual current circuit breaker (RCCB), ground fault circuit interrupter (GFCI), or residual current operated circuit-breaker with integral over-current protection (RCBO), which will cut off the supply of electricity to the appliance if the currents in the two poles of the supply are not equal and opposite.

2.3. Safety precautions

The machine must only be operated by trained and authorized personnel. It is the duty of the operator, to check the machine before start of work for externally visible damage and defects, and to immediately report changes that appear (including behavior during operation) that affect the safety. Preparation, retooling, change of work piece, maintenance and repair activities must only performed with equipment buttoned off, by trained personnel.

Principally, no safety components may be removed or disabled (already here we emphasize the imminent dangers, for example severe burns, loss of eye-sight). If the removal of safety components is re- quired during repair and service, the replacement of the safety components must be performed immediately after completion of the service and repair activities. No working methods are permitted that affect the safety of the machine.

It is absolutely forbidden for anyone who is under the influence of drugs, alcohol or reaction-impairing medication to work with the machine.

The scopes of competence for the different activities in the scope of operating the machine must be clearly defined and observed, so that under the aspect of safety no unclear questions of competence occur.
This applies in particular to activities on the electric equipment, which must only be performed by special experts.

Activity	Intended group of users
Operation/Maintenance	Trained personnel
Other activities (e.g. error correction, technical service)	Specially trained personnel or hired tradesmen

Follow the safety instructions to prevent bodily injury and material damage while working on and with the machine. Failure to observe these instructions can lead to bodily injury and damage to or destruction of the machine. Disregard the safety advice and instructions given in this manual shall release the manufacturer and their authorized representatives from any liability and from all claims.

- Without safety precautions, the following risks exist with exposure to laser radiation:
- Skin: Burns
- Clothing: Danger of fire
- Eyes: Burns to the retina for NIR (Near Infra-Red) LASER

- The laser beam must never be directed onto persons or animals!
- Never try to modify or remove the safety devices or cover of the laser head!
- Never try to modify or disassemble the laser and do not try to start up a system that had been modified or disassembled
- Dangerous radiation exposure can result from the use of operation or adjustment equipment other than that described here, and if different operational methods are performed.

The disregard for the safety instructions may put the operator and surrounding personnel at risk.

Risk posed by the incorrect actions of untrained individuals!

The improper use of the machine can lead to injury and/or damage to the machine.

- Inform personnel about the machine's function and any other risks and record this in the training records.
- Observe official regulations regarding the operation of machines and accident prevention regulations

Risk posed by missing, faulty or bridged safety installations and machine components!

Faulty or missing safety installations and machine components can lead to death, injury and/or damage to the machine.

- Check carefully that safety installations and machine components are functioning properly and are fault free.
- The specified actions should be undertaken immediately if parts are faulty or defective.

Risk posed by incorrect operation (in particular in setup-mode)!

Setting and operating the machine with limited knowledge of its function can lead to injury and/or damage to the machine.

- Read and observe the operating and safety instructions before commissioning the machine!

Risk posed by incorrect operation by unauthorized individuals!

Setting and operating the machine with limited knowledge of its function can lead to injury and/or damage to the machine.

- Never leave the machine unattended while in operation.
- Turn off the machine at the main button when not in use.

Risk posed by missing machine signage!

Making the wrong assumptions can lead to the risk that the machine is operated incorrectly.

- Replace missing machine signage.

Risk posed by non-repairable faults!

Any non-repairable fault may damage the machine.

- Turn off the machine and call customer service!

Risk posed by using inferior spare parts or parts of other manufacturers!

The use of inferior spare parts or parts produced by other manufacturers impairs the safety of the machine and invalidates the Declaration of Conformity (CE) supplied with it.

Wear parts or damaged mechanical, safety or electrical components should be replaced by original spare parts.

Risk posed by missing protective equipment!

- Wear the appropriate workwear.
- Wear safety glasses (class 4/USA: Class IV)
- Use a suitable extraction system.

Risk posed by laser cutting and engraving reaction on products!

A suitable extraction system must be used when laser marking due to the possible generation of gases, fumes and any other partially toxic by-product.

In individual cases, the reaction products may consist of static dust. If this enters any electrical systems it can cause short circuits leading to personal injury and material damage.

Risk posed by flammable or explosive materials!

Class 4 laser radiation such as that emitted by the widlaser C700 may ignite materials or cause explosions.

Among others it should be ensured that:

- Parameters are selected so that the material does not overheat.
- The system is monitored if necessary.
- Dust is extracted safely.
- There is no accumulation of any flammable residues or remnants in the workspace.

Depending on the materials being processed and the parameters selected, laser cutting or engraving may generate gases, fumes, aerosols or dust. The toxicity of such by-products depends on the material. The operator is responsible for ensuring and maintaining a suitable extraction system in place and for compliance with the relevant guidelines in order to protect individuals and the environment.

The machine is equipped with an observation main door made of laser resisting plastic. In order not to damage it, it should only be cleaned with clean water and possibly a little detergent if necessary. Use a soft cloth in order not to scratch the surface.

ATTENTION

Benzene, alcohol, acetone, solvent or similar cleaning agents will damage the laser protection polycarbonate, which must be replaced immediately.

Scratches must also be avoided. The laser protection polycarbonate must be replaced immediately if it becomes damaged.

3. Machine general information

3.1. Applications and materials

The widlaser C700, can engrave and cut a wide range of materials., making it the ideal machine for a wide range of applications.

Materials	Engraving	Cut
Wood	x	x
Stone	x	
Acrylics	x	x
MDF	x	x
Fabrics	x	x
Glass and crystals	x	
Coated Metals	x	
Ceramics	x	
Foams	x	x
Delrin	x	x
Textiles	x	x
Natural leather	x	x
Marble	x	
Matte Board	x	x
Melamine	x	x
Paper	x	x
Rubber	x	x
Wood Veneer	x	x
Fiberglass	x	x
Tiles	x	
Plastics (PI, PP, ABS, PE, PETG, PS, PA, PES, POM, PMMA)	x	x
Cork	x	x
Corian	x	x
Anodized Aluminum	x	
Stainless Steel	*	
Bare Metals	*	
* CO2 lasers will mark bare metals when using a specific metal marking product.		

It is strictly forbidden to process on PVC materials.
The results of cutting and engraving on plastic depends on the quality of the material.
Results can vary according to it.

3.2. Accessories

The widlaser C700, has as optional a range of accessories, among those are:

- Different shape and diameter rotary devices, for engraving on round objects, such as tubes, glasses, bottles, etc.
- Customized accessories can be developed by widinovations upon costumers' requirements and needs.

3.3. Main components

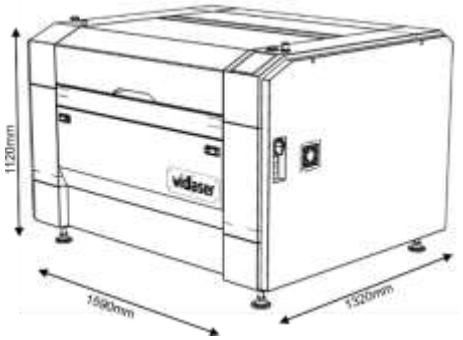
The widlaser C700, is composed by a variety of components. Among those the machine´s main components are:

- Laser.
- Lens and mirrors.
- Cooling system.
- Exhaust system.

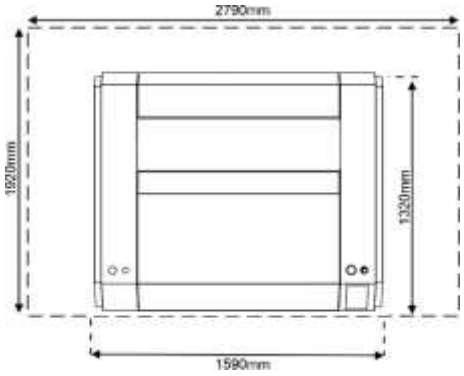
3.4. Machine characteristics

3.4.1. Physical dimensions

The widlaser C700, external measures are, 1.590 x 1.320 x 1.120mm (W x L x H).



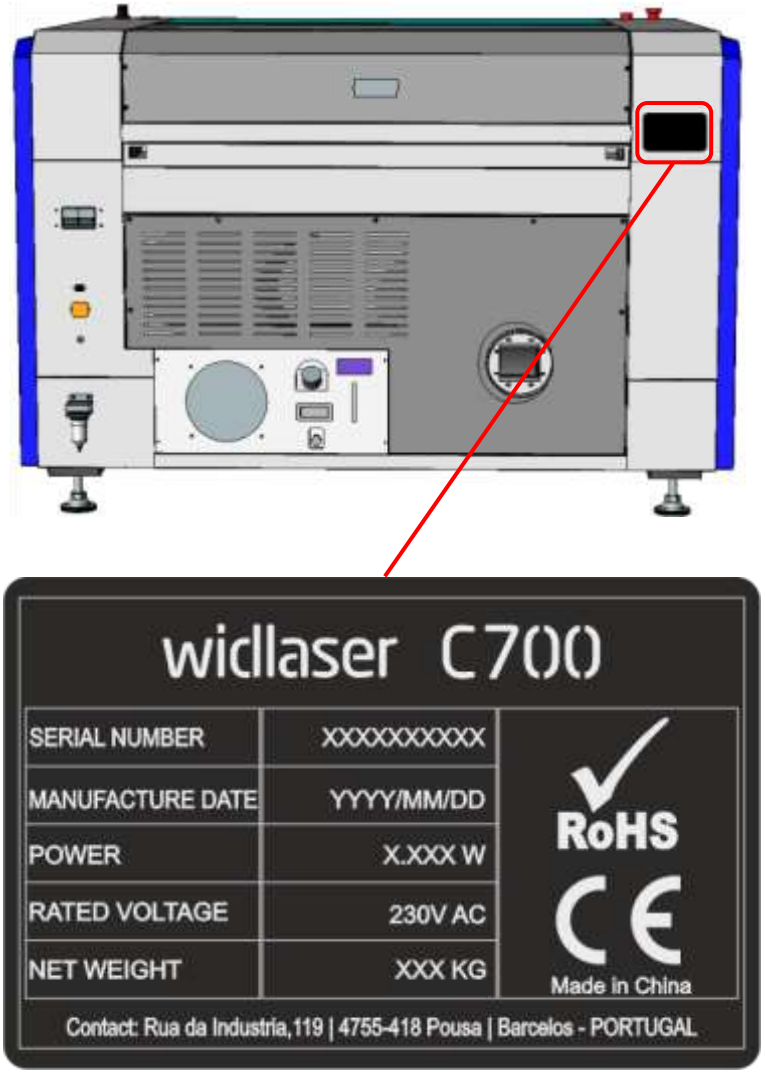
The machine installation foot print is 2.790 x 1.920mm. This includes the minimum free area around the equipment.



The minimum height clearance for the installation is 1.760mm.

3.4.2. Manufacturer's Label

The manufacture's label is located on the backside of the machine. See the picture below for reference:



NOTE
The serial number, model and year of manufacture from the machine can be found here.

3.4.3. Waning and Information labels

The warning and information labels are attached in such positions of the machine that could represent a source of danger during set-up and operation. Therefore, follow the information on the labels. If labels are lost or damaged, they must be replaced immediately. Please contact widinovations or your widinovations dealer for details.

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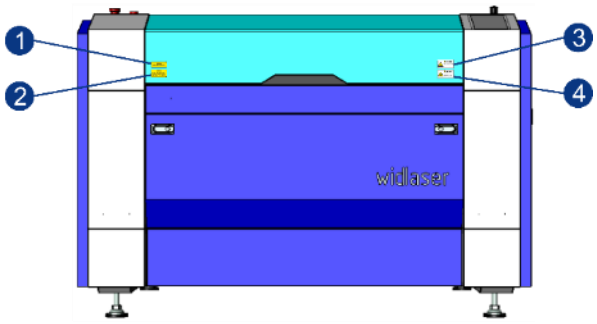
FRONT VIEW



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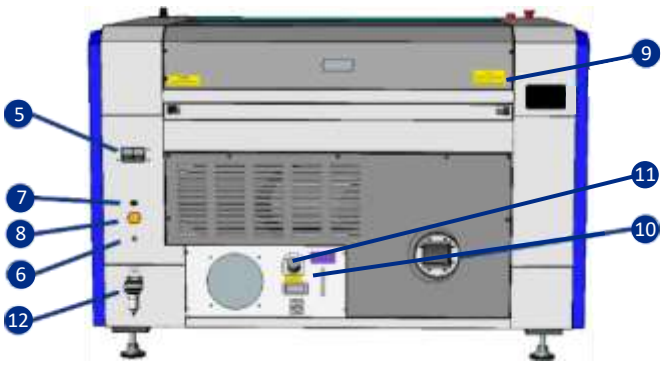
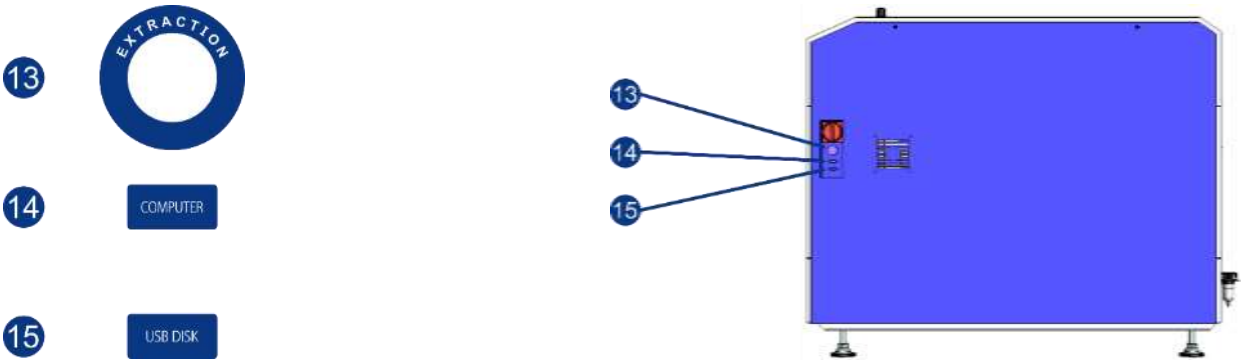
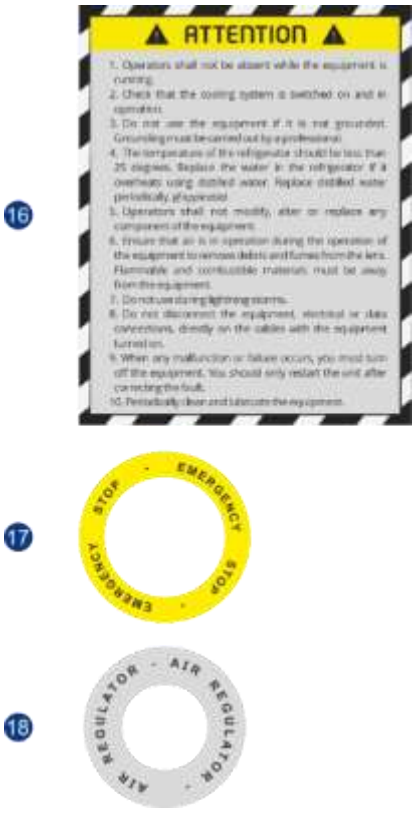
BACK VIEW

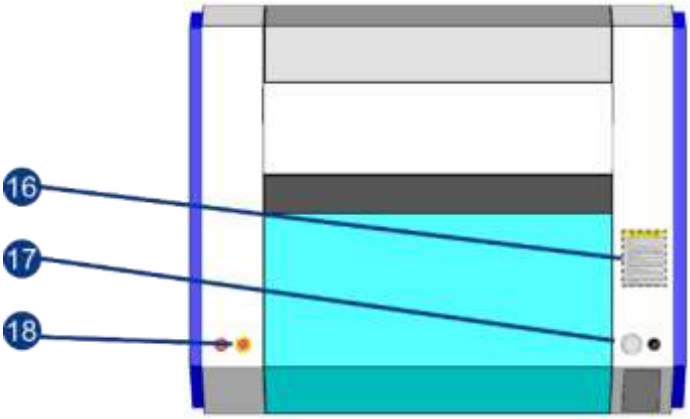


RIGHT SIDE VIEW

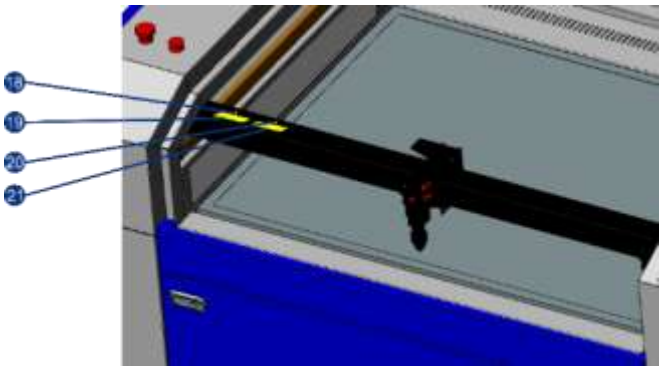




TOP VIEW



WORKING AREA



3.4.4. Electrical specifications

The widlaser C700 system, must be connected to a power outlet with the following specifications, 230v 16A 50/60Hz. The maximum power consumption of the machine is 2500w.

Please refer to the machine specifications label for the exact power consumption of your version.

The machine must be grounded, with a ground resistance below 5 Ohms.

3.4.5. Components specifications

The widlaser C700 main components specifications are:

LASER			
Laser Type	sealed glass tube	30w / 50W RF laser	IRADION Z30 RF Laser
Laser Type	CO2 laser		
Rated Optical Power (watts)	80-100w	30w / 50w	30w
Wavelength	9.6 - 10.6 µm	10.6 µm	9.3µm
Material	glass	aluminum	ceramic
Cooling	water cooling	air / water cooling	air / water cooling
Operation temperature	15º - 25º C	5º - 60º C	10º - 40º C
Beam Quality	≤ 1.1	≤ 1.2	≤ 1.2
Beam Divergency	3.1 mrad	7.5 ± 0.5 mrad	< 7mrad (full angle)
Polarization	continued	>100:1 Fixed linear polarization	random
Humidity	0~90%	0~95%	30~85%
Output power tunability	5% – 100%	1% – 100%	1% – 100%
Input Voltage / Current	18KV / 25mA	48V DC / 12.5A	48V DC / 12A

WATER CHILLER UNIT *	
Power input	AC 230v ± 5%, 50/60Hz
Maximum lift	10m
Pump volume	15L/min
Rated current	2.5A
Cooling agent	R134a
Colling agent amount	220g

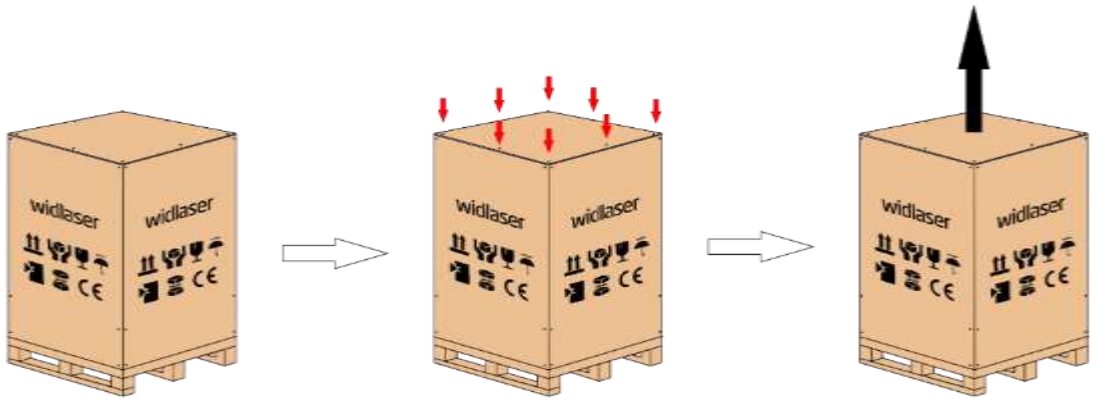
*In the case of the air-cooled laser the chiller unit is not installed.

EXHAUST UNIT	
Power input	AC 230V ± 5%, 50/60Hz
Rated current	2.28 A
Power consumption	500 w
Speed	2700 rpm
Air flow	15m^3/min
Air pressure	630 pa
Connection diameter	150 mm

4. Installation and operation

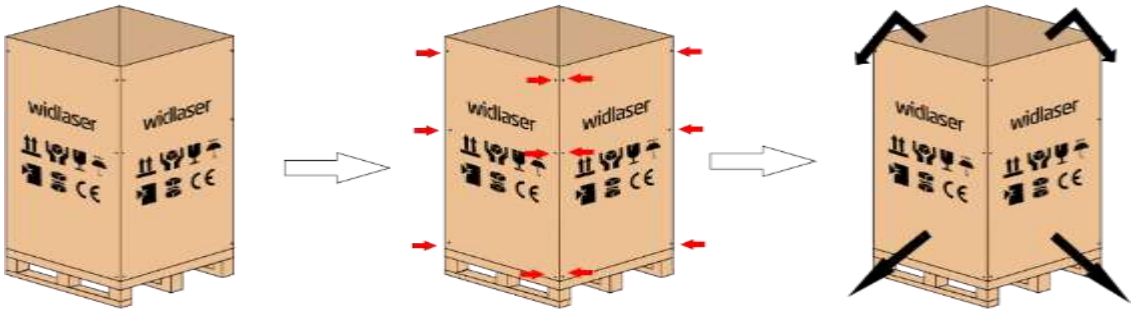
4.1. Unpacking the machine

Unless agreed otherwise the widlaser C700, is transported in a wood box. Please verify that the wood box has no damaged parts.



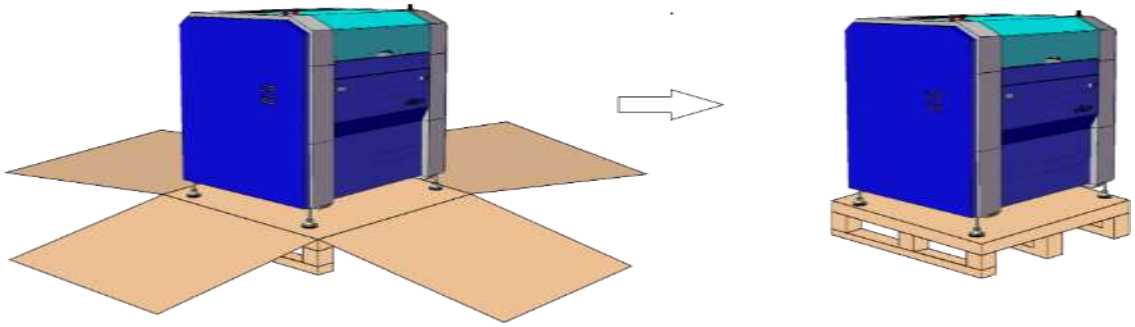
Remove all the screws on the top panel.

Remove the top panel.



Remove the screws from the side panels, one by one.

Remove the side panels, one by one.



Remove all the side panels and then remove the machine from the pallet with a forklift.

4.2. Installation environment

The installation of the widlaser C700, must be done in a clean, dust free and temperature stable environment. It is also mandatory that the installation local has no vibration and no electromagnetic interference.

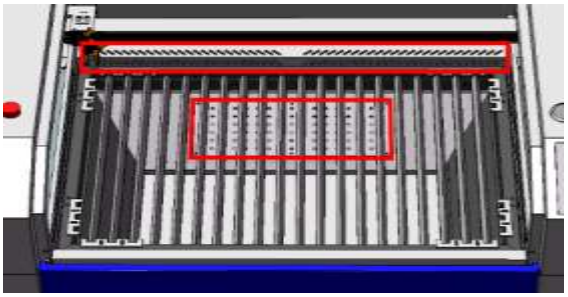
The operating temperature range is, 10-35 ºC.

The humidity range is from 30% to 85%, non-condensing.

4.3. Exhaust and refrigeration system

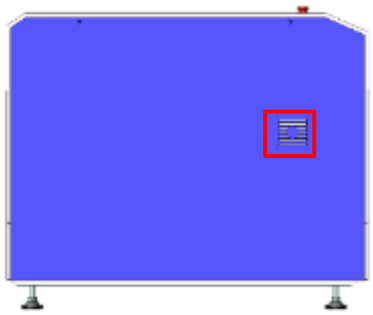
The widlaser C700, includes a dust and smoke exhaust system.

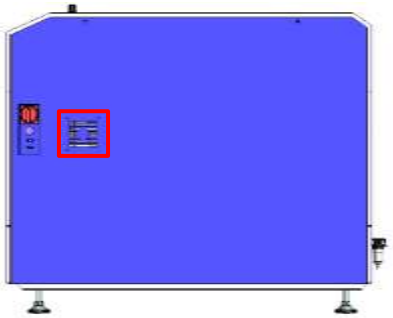
The exhaust inlets are located behind and below the table (as shown in the images below)



Keep in mind that the inlets must be periodically cleaned, as indicated in the maintenance chapter.

The widlaser C700 ventilation inlets is located on both the left and right side of the machine, as the images below illustrate:





The ventilation inlets must be kept free and uncovered, to allow the system to operate properly.

Keep in mind that this system needs to be cleaned periodically as indicated in the maintenance chapter.

4.4. Machine operation

To properly and securely operate with the widlaser C700, please follow the indications and instructions below.

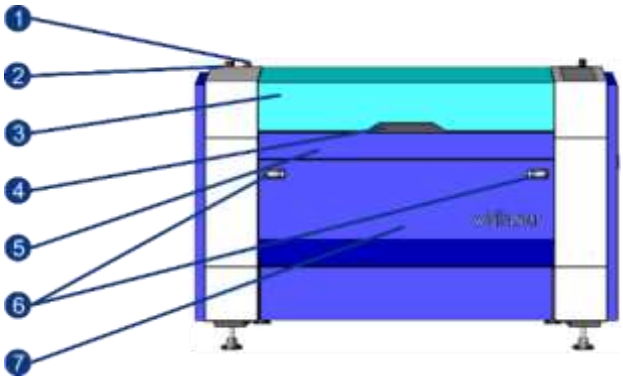
WARNING

Improper operation may lead to severe physical injury or material damage. For this reason, work may only be carried out by authorized, trained personnel who are familiar with how to operate the machine and in strict observance of all safety instructions

4.4.1. Machine exterior overview

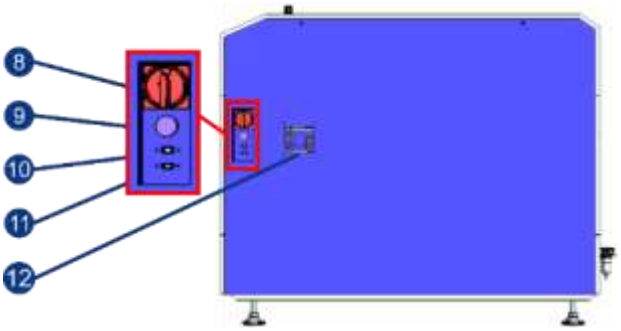
Machine Front

1. Status light.
2. Emergency switch.
3. Main safety door.
4. Main door handle
5. Front material door.
6. Front door handles.
7. Front door.



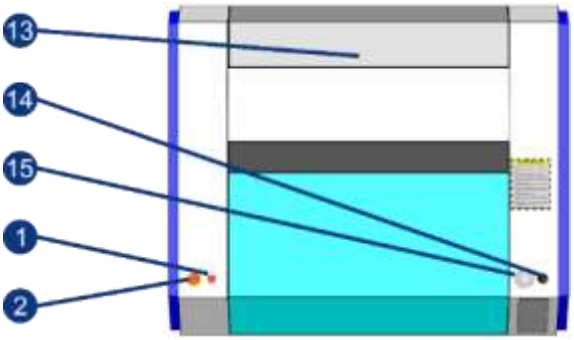
Right side control panel

8. Main power switch.
9. Exhaust button.
10. Computer USB plug.
11. USB Disk plug.
12. Ventilation opening.



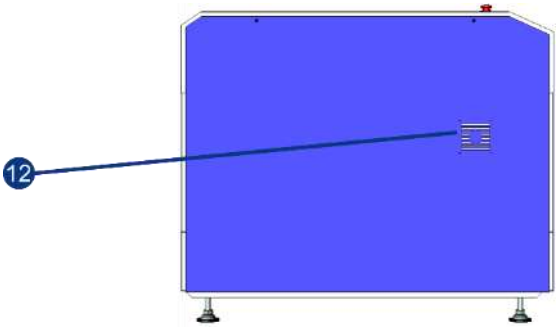
Machine top view

13. Laser housing.
14. Air assist pressure adjusting knob.
15. Air assist pressure display.
1. Status light.
2. Emergency switch.



Machine left side

12. Ventilation opening.

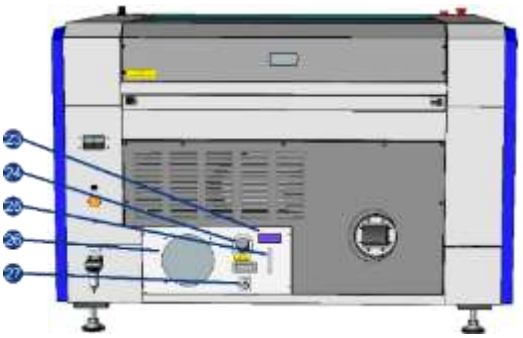


Machine back

16. Circuit breaker.
17. Compressed air filter.
18. Compressed air input plug.
19. Ethernet plug.
20. Power input plug.
21. Machine identification plate.
22. Exhaust output.

Machine chiller unit

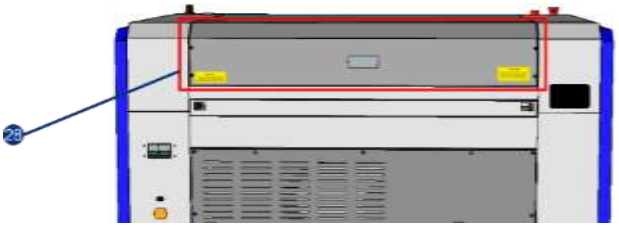
23. Chiller display.
24. Chiller water inlet.
25. Water level indicator.
26. Ventilation fan.
27. Chiller water drain.



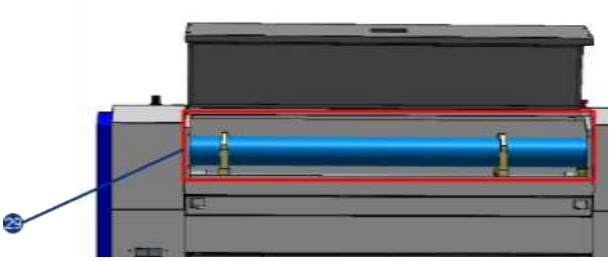
NOTE

In the case of a configuration with an air-cooled laser, the water chiller unit is not installed.

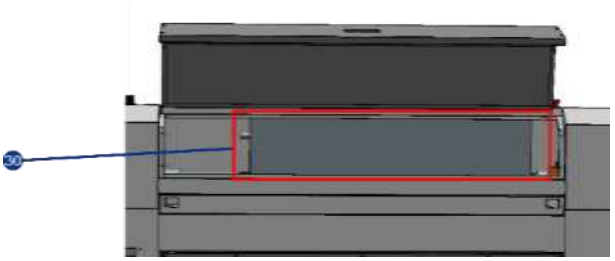
28. Laser housing.



29. Laser glass tube.

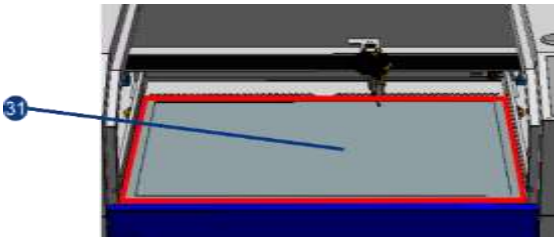


30. RF laser tube.

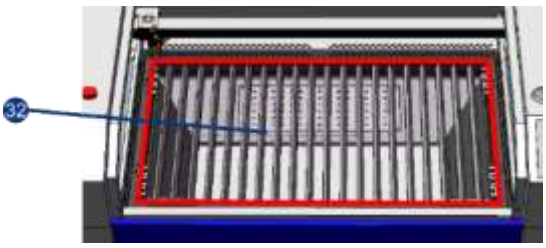


4.4.2. Machine interior overview

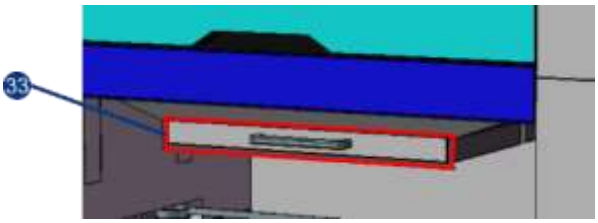
31. Honeycomb table.



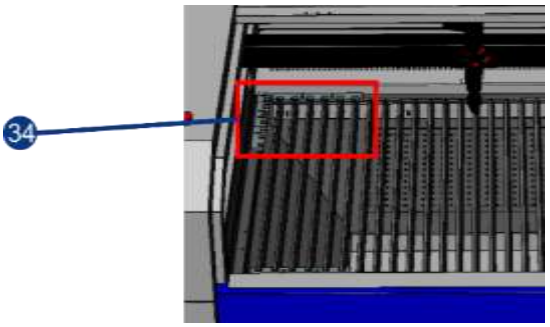
32. Removable slats table.



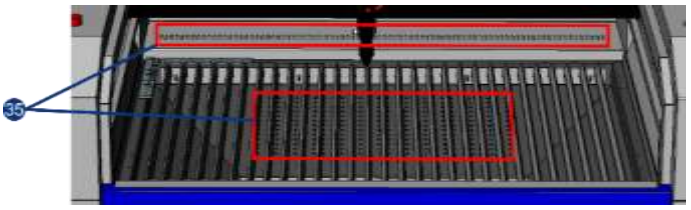
33. Waste drawer.



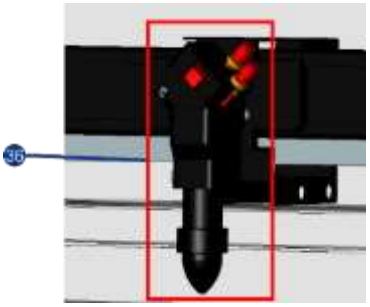
34. Material position alignment brackets.



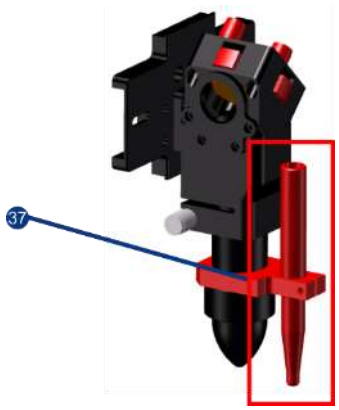
35. Exhaust inlets.



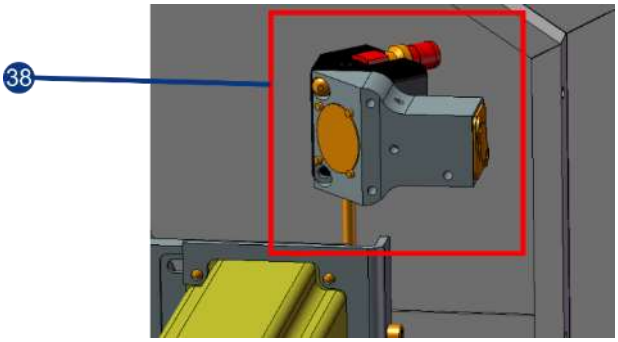
36. Laser Head



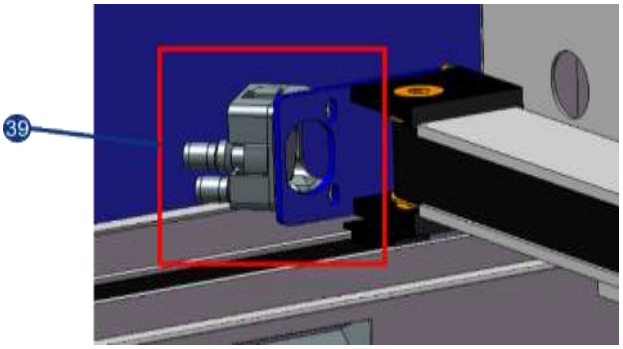
37. Auto focus sensor



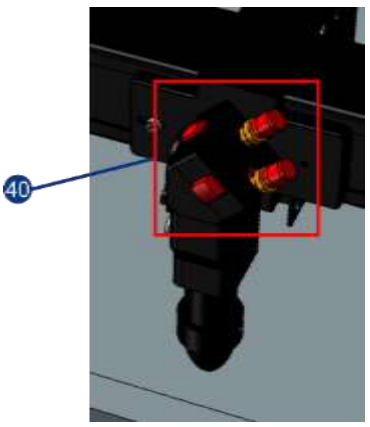
38. First mirror, visual red point lens and housing.



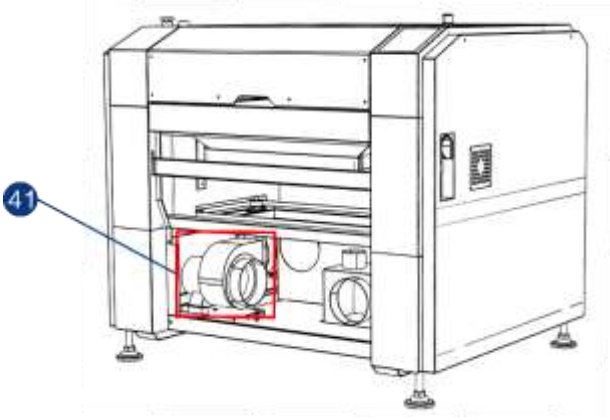
39. Second mirror.



40. Third mirror.



41. Exhaust fan



42. Tool Box

Together with your laser equipment, we supply a tool box, that has the following composition.

Description	Quantity
widlaser USB Disk	1 Unit
Ethernet Cable (3m)	1 Unit
USB Data Cable	1 Unit
Clamps (150mm)	2 Units
Water Cooling Hose	2 Units
Exhaust Pipe (150mm)	1 Unit
Power Cable	1 Unit
Manual Focus Measure	1 Unit
Allen Wrench Set	1 Unit
Front Door Key	2 Units
Auto Focus (pin + spring)	2 Units
Limit Sensor	1 Unit
Air Hose (6mm)	3 Meters

4.4.3. Machine lens

The widlaser C700 laser system, comes by default with a 2.5-inch lens. As an option the laser head supports 4 inch and 2-inch lenses.

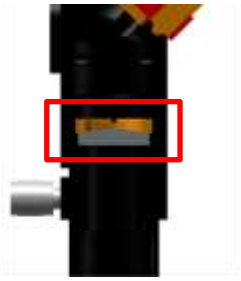
The assembling of the lenses is as follows.

4-inch lens

2.5-inch lens

2-inch lens

Regardless of the lens assembled or its position in the laser head, the way the lens is assembled is always the same. The convex part of the lens is always placed facing up. This side, when assembled, will be facing the laser origin and the laser head mirror, as shown in the following images:



NOTE
The lenses are always assembled with the convex side facing the laser head mirror.

4.5. Before operation

Before starting to work with the machine, the following points should be checked:

- Check the electrical installation is complete and the input voltage is correct.
- Ensure that the optical components, such as lenses and mirrors, are free from dust and dirt.
- Check the environmental conditions against the technical specification.
- Ensure the water has been added to the specified level of the machine water chiller (when applicable).
- Ensure you are familiar with the laser safety regulations.
- Ensure all laser safety measures have been fulfilled.
- Only then may the system be switched on, once all provisions for complying with laser safety have been checked by an authorized individual and confirmed to have met the standards.

4.6. Focusing

CAUTION
Risk of injury when working with mechanical components.

It is absolutely essential to maintain the correct focal distance for every job. Only when in focus will the laser beam achieve the power density necessary for working.

Before starting any job it is therefore necessary to set the correct focal distance between the laser head and the workpiece surface. An incorrect focal distance is the most common cause of poor or even indistinguishable cutting and engraving.

Position the material over the table and use the machine menu to perform the auto focus function to adjust the focal distance to the correct value.

In the event that the auto focus sensor is damaged or not working properly, you can use the focal distance measure sent with the machine to manually adjust the distance between the laser head and the material surface. You should place this piece between the laser head and the material and move the material up or down, to match the thickness of this measure.

4.6.1. Verifying focal distance

The real focus distance between the laser head and material can vary slightly from machine to machine or even after a laser head component replaced. to fine tune the exact distance, execute the procedure below.

1. Place a standard paper sheet over the table, preferably use the honeycomb table.
2. Pick a tool or a piece of material with 8mm thickness and use it to set the distance between the laser head and the paper sheet.
3. Place the laser head over the material and press the "Pulse" key. This will make the laser fire and make a small hole in the paper. Use a pen to write "8" next to the hole for reference.
4. Move the table down 1mm using a secondary measure or using the computer software to move the exact distance.
5. Move the laser head or the paper sheet slightly to the side and press again the "Pulse" key. Write "9" next to the new hole.
6. Repeat steps 4 and 5, lowering the table 1mm at a time until you reach a distance of 15 mm between the paper and the laser head. Always writing the distance next to its corresponding hole.
7. Analyze the holes made in the paper and find the smallest hole. The distance between the material and the laser head that is written next to it will be the correct focus distance.

8. We advise you to repeat the operation to ensure no step was wrongly done.
9. You should achieve the same conclusion on the second time you repeat this operation.

4.7. Machine software

The software is supplied on the USB disk that is provided with the machine.
For information on using the software, please read the software manual.

4.8. Main safety door

The main door protects from the laser radiation, by absorbing the laser radiation.

ATTENTION
The main door should be replaced if it is damaged.

4.9. Positioning the workpiece

Open the main safety door, place the material over the machine table.

If needed, move the table down to be able to fit the material over the table, by pressing the "Menu" key, and then select "Z Axis", press the "⇦"key, to move the table down and the "⇨"key, to move the table up. When finished press "Esc" to exit.

Position the laser head over the desired start position over the material and press "Origin" key to set it as the work origin.

Use the "Frame" function in the machine display to have a real preview of the material needed to execute the job that is loaded in the system. The system will move displaying the area of material needed for the job processing.

If needed, reposition the laser head by moving it with the arrow keys.

If the material dimensions are not enough, replace the material for another with the proper area to suit the current job processing.

4.10.Power ON/OFF

4.10.1. widlaser C700 turn ON sequence

1. Ensure that the machine is connected to an energy outlet.
2. Verify that the circuit breaker is on the ON position.
3. Verify that the emergency buttons are unlocked.
4. Remove any object from the working area.
5. Turn ON the Main Power Button, at this point energy is provided to the system and the machine light is on.
6. Allow the machine to finish the turn up sequence, and move to the last Origen point.
7. Connect the computer to the machine by a USB connection or via Ethernet.
8. In the machine software, open the file and download it to the machine, if needed give it a name, up to 8 characters.
9. Place the material over the machine table. If needed move the table down to be able to fit the material over the table, by pressing the "Menu" key, and when selected "Z Axis", press the "⇦"key, to move the table down and the "⇨"key, to move the table up. When finished press "Esc" to exit.
10. Move the laser head to a position over the material, away from the material edges.
11. In the machine display, press "Menu", move the selection down, by pressing the "⇩" key, to select the "Auto Focus" function. Press "Enter" key to perform the auto adjust of the focal distance between the machine and the material surface.
12. When the "Auto Focus" procedure is finished the machine is at the correct focal distance to initiate work.
13. Position the laser head on the desired starting point, using the arrow keys, and press "Origen" key to memorize the position.
14. The latest downloaded file is already loaded in the system, but to be able to access the preview and job settings on the machine press "File", and select the desired file.
15. You can press the "Frame" key to have a preview of the area needed to execute the work.
16. Adjust the auxiliary air, to the desired pressure, using the "air assist knob".
17. Turn on the Exhaustion (If necessary).
18. Press "Start/Pause" to start the work. Press it again if there is the need to pause the job.

4.10.2. widlaser C700 turn OFF Sequence

1. Move the laser head to the top right corner.
2. Turn OFF the extraction, if applicable.
3. Turn OFF the Main Power Switch.
4. Remove all material from the machine working area.

4.11.Safety door

The machine door is connected directly to an interlock circuit. Therefore, starting a job is only possible with the door closed.

5. Maintenance

Improper maintenance can cause serious injury or damage. For this reason, this work may only be carried out by authorized, trained personnel, who are familiar with, how to operate the machine and in strict observance of all safety instructions.

Using explosive or flammable cleaning agents presents a risk of fire or explosion:

No flammable or explosive liquids are allowed to be stored near the machine.

CAUTION

Before any maintenance work takes place, ensure that the power supply has been switched off and the system is turned off.

5.1. Maintenance schedule

COMPONENT	DAILY	WEEKLY	MONTHLY	ANNUALLY
Lenses and mirrors	Check and clean if necessary;			
Working area	Remove debris and clean;			
Waste drawer	Remove debris and clean;			
Emergency Buttons		Check visually and test;		
Safety door Sensors		Check visually the integrity;		
Exhaustion entrances			Inspect, clean if necessary;	
Cooling fans and ventilation openings			Check, clean if necessary	
Chiller unit			Check level, add distilled water if necessary	Replace water.
Humidity filter		Check and clean;		
Belts		Clean the surface		Clean and adjust*;
Linear rails				Clean and grease*;

* The following maintenance procedures are only allowed to be realized by trained and authorized technical personnel, according to the indications.

5.2. Cleaning the lenses

INFO

Laser optics are highly sensitive and their surfaces are not as hard as traditional glass. They can also be easily damaged by cleaning. It is therefore necessary to ensure that any dirt is removed using a suitable blowing device and that the surrounding area is cleaned regularly.

ATTENTION

Never touch the optical components with your fingers! Oily or dirty hands may damage the lens surfaces.

To remove larger pieces of dirt, blow the lens with the use of hand air dust blower.
After removing the hard and bigger pieces of dust use a soft lens cleaning cloth in conjunction with high proof (min. 99 %) isopropyl alcohol or special lens cleaning liquid.

Do not dip the cleaning cloth into the cleaning solution. This contaminates the solution and makes it unusable. Place drops of the solution on the cloth!

Apply the cleaning solution carefully in order to avoid scratching the surface of the lens.
Do not use any tools or hard objects to clean the surfaces. Scratches cannot be repaired.

Small blows should be used to remove dust.
Do not use compressed air as it contains small quantities of oil and water.
Distribute the cleaning fluid carefully using small circular motions. Start at the center of the lens and move outwards to the edge. Keep moving the cloth until the entire surface is clean.
Do not exert any pressure on the lens.

6. Troubleshooting

This chapter should assist maintenance personnel with the identification and resolution of operational faults based on error messages and symptoms.

ATTENTION

Repairing faults incorrectly can cause serious injury or damage. For this reason, this work may only be carried out by authorized, trained personnel who are familiar with how to operate the machine and in strict observance of all safety instructions.

INFO

Movements and functions may only be performed when there are no errors and all devices are ready for operation. This state is prerequisite for starting the widlaser C700.

6.1. Errors, cause and resolution

Problem	Possible Cause	Resolution
Not possible to turn on the laser machine	System is switched OFF or circuit breaker is OFF;	Turn On the system in the main power switch;
	System does not turn ON;	Check if the system is connected to the power outlet;
	System does not turn ON;	Check if the emergency buttons are pressed;
No laser beam	Laser is not focused;	Check the focal distance, perform the auto focus function;
	Table is not leveled;	Check the distance between the table and the laser head on the 4 edges of the table;
	Incorrect laser parameters;	Check the parameters in the program. Use suitable parameters for the material and application;
	Focus lens and/or mirrors are dirty;	Check the lens and mirrors for dirt and clean as required;
	Laser path is not aligned;	Readjust the laser path;
Insufficient laser output	Laser is not focused;	Check working distance;
	Incorrect laser parameters;	Check the parameters in the program. Use suitable parameters for the material and application;
	Focus lens is dirty;	Check the lens for dirt and clean as required;
Missing engraving parts	Focus lens is dirty;	Check the lens for dirt and clean as required;
	Surface of the material dirty;	Clean material surface;
	The engraving material is not parallel to the laser head;	Ensure that the entire marking surface is parallel to the focusing lens;

For other faults, get in contact with the widinovations, lda, support.

7. Declaration of conformity

UDEM

CERTIFICATE

ATTESTATION
CERTIFICATE OF MACHINERY AND LOW VOLTAGE DIRECTIVES

Technical file of the company mentioned below has been observed and audit has been completed successfully. 2006/42/EC Machinery Directive and 2014/35/EU Low Voltage Directive have been taken as references for these processes

Company Name	: **Widinovations LDA**
Company Address	: Rua Da Industria n° 119, Post Code 4755-417 Barcelos- Portugal
Related Directives and Annex	: **Low Voltage Directive 2014/35/EU** **Machinery Directive 2006/42/EC**
Related Standards	: **EN ISO 12100:2010; EN 60204-1:2006+A1:2009+AC:2010**
Product Name	: **Laser Engraving and Cutting Machine**
Report No and Date	: ESC-AEON-2019-05-1C
Product Brand/Model/Type	: C500, C700, C900, C1000
Certificate Number	: **M.2019.206.C1207**
Initial Assessment Date	: 21.05.2019
Registration Date	: 22.05.2019
Reissue Date/No	:
Expiry Date	: **21.05.2024**

UDEM International Certification Auditing Training Centre Industry and Trade Inc. Co.

The validity of the certificate can be checked through www.udem.com.tr. The CE mark shown on the right can only be used under the responsibility of the manufacturer with the completion of EC Declaration of Conformity for all the relevant Directives. This certificate remains the property of UDEM International Certification Auditing Training Centre Industry and Trade Inc. Co. to whom it must be returned upon request. The above named firm must keep a copy of this certificate for 15 years from the registration of certificate. This certificate only covers the product(s) stated above and UDEM must be noticed in case of any changes on the product(s)

CE

UDEM

Address: Mutlukent Mahallesi 2073 Sokak (Eski 93 Sokak) No:10 Çankaya – Ankara – TURKEY
Phone: +90 0312 443 03 90 **Fax:** +90 0312 443 03 76
E-mail: info@udemltd.com.tr www.udem.com.tr

8. ROHS certificate

ISTITUTO SERVIZI EUROPEI TECNOLOGICI

ISET S.r.l.

Sede Legale e Uffici		Cap. soc. i.v.	€ 10.200,00
Via Donatori di sangue, 9 - 46024 Moglia (MN)		Cod. Fisc. e P.IVA Reg. Imprese	02 332 750 369
Tel. e fax +39 (0)376 598663		REA	02 332 750 369
www.iset-italia.eu	iset@iset-italia.com	Cap. soc. i.v.	MN 0221098

CERTIFICATE

Certificat - Certificado- Сертификат - Zertifikat - 證書

1) **APPLICANT:** (who finally puts the product on the market)
Widinovations LDA
Rua da Industria nº 119, Post Code 4755-417 Barcelos- Portugal.

2) **CERTIFICATE NO.:** I/ISETC.000520190513
FILE REFERENCE: LEACMTCF-ROHS

3) **ISET MARK:**

4) **CAUTION ABOUT CE MARKING** (Instruction for the Applicant who puts the product on the EU market):
The label of the CE Marking on the left side should be not less than 5mm height. CE Marking and EC Declaration of Conformity are duties for the manufacturer or its applicant who puts the product on the market. This one is responsible to start the CE marking and certification procedure as required by the legislation in force. Only for the products which are compulsorily included into specific Directives or Regulations will be necessary to appoint a Notified Body.

5) **TYPE OF PRODUCT:** Laser Engraving and Cutting Machine
MODEL(S): C500, C700, C900, C1000

6) **LIST OF DIRECTIVES / REGULATIONS /STANDARDS** (as declared by the manufacturer itself)
Restriction of Hazardous Substances Directive 2011/65/EU
IEC 62321-1:2013, IEC 62321-2:2013, IEC 62321-3-1:2013, IEC 62321-3-2:2013, IEC 62321-4:2013, IEC 62321-5: 2013, IEC 62321-6: 2015, IEC 62321-7-1: 2015, IEC 62321-7-2: 2017, IEC 62321-8:2017

7) **NOTE:** The applicant is aware about the contents and information included in the ModCOM04.06 Regulation for this type of Certificate that is considered totally accepted. The latest revision of the Regulation is available and can be downloaded from the website www.iset-italia.eu. This document is not referred to any evaluation that could be considered as included in the scope of the activities covered by the standard BS EN ISO/IEC 17065:2012 or European Regulation 765/2008.

8) **REMARK:** Certificate is issued on voluntary application from the Client and it gives to the applicant the right to use and affix the ISET Mark (at point 3) on their products, even if it doesn't imply any assessment on the safety and compliance of the product. ISET declares that the only scope of the assessment is to verify the existence of the declaration issued by the manufacturer or an applicant under its own responsibilities.

9) **DATE OF ISSUE:** 13/05/2019 **EXPIRY DATE:** 12/05/2024

10) **SIGNATURE:** Miriam Camplone
(On behalf of the Legal representative)

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9. Liability and warranty

All information, illustrations, tables, specifications and diagrams contained in this operation manual have been carefully compiled according to the art current at the time of going to press. No liability is accepted with regard to errors, missing information and any resulting damage or consequential loss.

Strict compliance with the safety procedures described in this operation manual and exercising extreme caution when using the equipment are essential for avoiding and reducing the possibility of personal injury or damage to the equipment. For complete compliance with all safety measures, consult with your local safety regulator or entities to adopt all the needed measures.

The manufacturer shall not be liable for damage and or faults resulting from the disregard of instructions in the manual.

Additionally, widinovations, lda, is not responsible for any personal injury or material damage, of either an indirect or specific nature, consequential loss, loss of commercial profits, interruption to business, or loss of commercial information resulting from the use of the equipment described in this manual.

Any software incorporated in this equipment should only be used for the purpose for which it was supplied by widinovations, lda. It is strictly prohibited for the user to undertake any alterations, conversions, translations into another computer language or copies (except for any essential back-up copies).

Widinovations, lda, reserves the right to update any of the information, illustrations, tables, specifications and diagrams contained in this operation manual with regard to technical developments at any time without notice.

10. Cutting and engraving parameters

As material composition and fabrication method may vary between different manufacturers, it is virtually impossible to have a parameter for every material. In order to help our customers with adjusting different jobs and different material settings, we built a parameter list with base parameters that are preadjusted, requiring only final adjustments. You can find this parameter list in the USB disk included with the machine.

11. Disposal of equipment or components

Do not dispose of the machine with domestic waste!

Electronic devices have to be disposed of according to the regional directives on electronic and electric waste disposal. In case of further questions, please ask your supplier.

Use suitable tools if you have to disassemble the machine. All separate parts need to be sorted into the different material types and also be disposed according to the regional directives on electronic and electric waste disposal.

widlaser

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